

## VIDEOMED SX

**RX**

Service

### Setting Instructions

H1X / HD emulation from firmware VA01F

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Chapter	Page	Rev.
0	1 to 4	04
1	1 to 2	04
2	1 to 10	04
3	1 to 4	04
4	1 to 2	01
0	1 to 4	05
1	1 to 2	05
2	1 to 10	05
3	1 to 4	05
4	1 to s 2	02

<b>1</b>	<b>Notes</b>	<b>1 - 1</b>
	Validity of the document . . . . .	1 - 1
	Additionally required documents . . . . .	1 - 1
	Tools and measuring equipment . . . . .	1 - 1
	General notes . . . . .	1 - 1
<b>2</b>	<b>Settings</b>	<b>2 - 1</b>
	Installation of the service program . . . . .	2 - 1
	Start service program . . . . .	2 - 1
	Selecting the Emulation . . . . .	2 - 2
	Selecting the Video Standard . . . . .	2 - 3
	Adjustment of the size and position of the image . . . . .	2 - 3
	Setting the size of the AGC measurement fields . . . . .	2 - 4
	Adjusting the fix gain 2 (only with Fluorospot H) . . . . .	2 - 5
	Overview of the Configuration as H1X Emulation . . . . .	2 - 8
	Overview of the Configuration as HD Emulation . . . . .	2 - 9
	Nominal values for the H1X emulation . . . . .	2 - 10
	Pedestal . . . . .	2 - 10
	Manual gain 1/2 . . . . .	2 - 10
	AGC function . . . . .	2 - 10
<b>3</b>	<b>Service auxiliaries</b>	<b>3 - 1</b>
	Generating a Saw-Tooth. . . . .	3 - 1
<b>4</b>	<b>Changes to previous version</b>	<b>4 - 1</b>

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## Validity of the document

These instructions provide an overview of the setting values of the videomed SX. The values shown in the service masks are presettings and can be changed if, for instance, IQ desired values are not achieved.

The document applies for setting work on system-tested systems as well as for sub-systems.

Chapter 3 (Service auxiliaries) describes the generation of a sawtooth signal as, for instance, is required for the setting of the Video In board (FLUOROSPOT H).

The function of the service masks is described in the service instructions RA52-041.061.01...

## Additionally required documents

VIDEOMED S/S-C/SX service instructions	RA52-041.061.01...
VIDEOMED S/SX circuit diagram	G5383

## Tools and measuring equipment

Service PC as specified in ARTD 3.1.0	
Extension cable (interface cable)	99 00 440 RE999
Oscilloscope >50 MHz with delayed time basis, e.g.:	
Tektronix 2232	97 02 234 Y3155

## General notes

Every permanent change of the setting parameters has to be confirmed with **"Permanent"** so that the VIDEOMED SX accepts the data (Fig. 1).

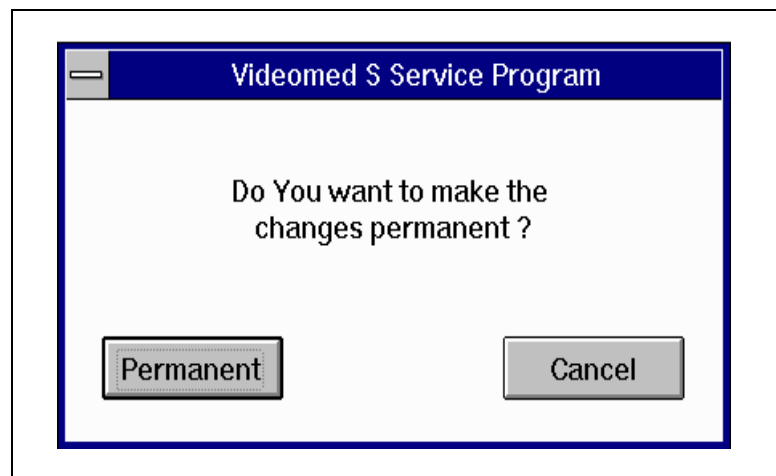


Fig. 1

### NOTE

**Always save the last, current settings on the configuration floppy supplied.**

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## Installation of the service program

In some DOS versions there can be problems when reading the configuration floppy. Therefore the service software should be started from the hard disk of the service PC.

- Call up the **"File Manager"** in the WINDOWS **"Program Manager"**.
- Create the directory **"ssw"** under the hard disk drive C. Select **<Create directory>** in the **<File>** menu bar.
- In the directory **"ssw"** create the subdirectory **"vid\_sx"** and under this **"va01f"**.
- Insert the floppy disk with the firmware + service software VA01F in drive A.
- Call **<File> <Copy>**
- Enter a:\\*. \* in the **"From"** box and "c:\ssw\vid\_sx\va01f" in the **"To"** box and confirm with **"OK"**. The floppy ist copied into drive C.
- Remove the floppy and close the **"File Manager"**.
- Click **<File> <New>** in the Program Manager.
- Create the **"Service"** program group or, if this window already exists, select it in the Program Manager.
- Select **<File> <New> "Program"** and confirm with **"OK"**.
- Click **"Search"** and select the directory c:\ssw\vid\_sx\va01f by double clicking.
- Under **"File name"** select videomed.exe and confirm with **"OK"**.
- Enter VA01F in the **"Description"** field, select the **"Symbol"** box, confirm with **"OK"**.

## Start service program

- Connect the service PC (Com1) with serial interface cable to D12.X100.
- Start the service program by double clicking the icon (Fig.1).

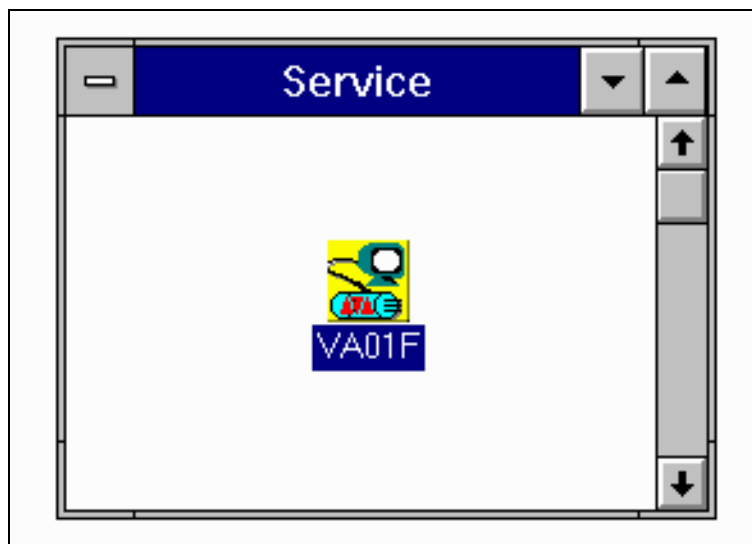


Fig. 1

- Click **"Service"** or the service program will automatically start after approx. 10 seconds (Fig.2).

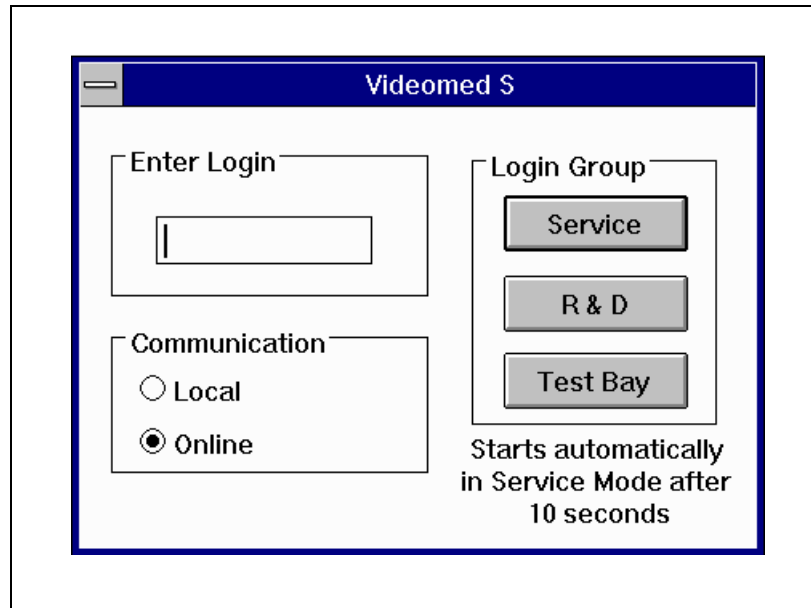


Fig. 2

## Selecting the Emulation

- Call the mask as shown in Fig.3 via **<Configuration> <Emulation>**.
- Select the required emulation for VIDEOMED H1X or VIDEOMED HD and click **"OK"**.
- Confirm the change of the emulation with **"Permanent"**.

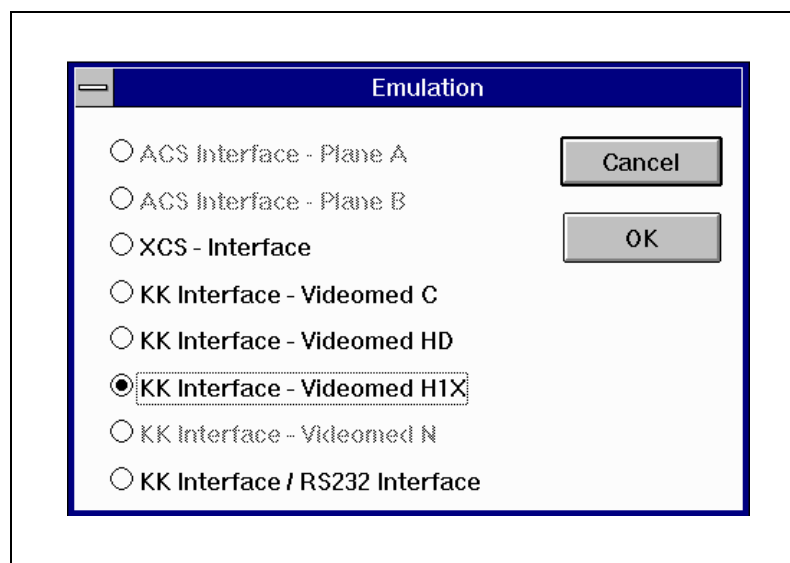


Fig. 3



## Selecting the Video Standard

- Call up <Configuration><Video-Norm>.
- The selection of 1023/60Hz and 1249/50Hz are possible for the H1X/HD emulation. Confirm the change of the Video standard with "OK" (Fig.4)..
- The standard 1125/60Hz is prepared for future applications.

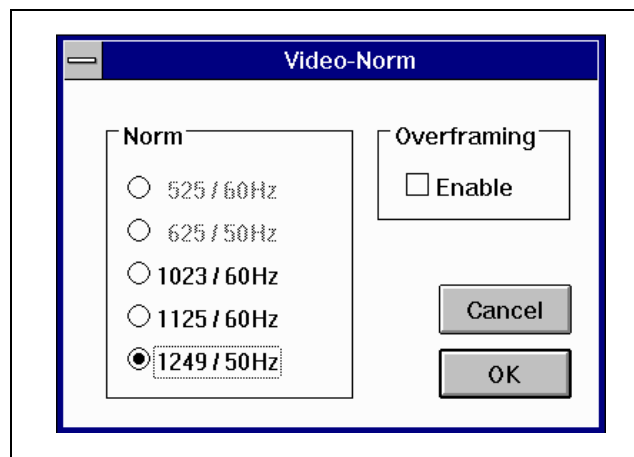


Fig. 4

### Warning

If the Video standard has been changed, the size and position of the image has to be newly adjusted.

## Adjustment of the size and position of the image

The TV system should have been switched on for at least 15 minutes.

- Call <Adjustment> <Auto Adjustment>. Select only "Image Size" in the window, as shown in Fig.5. The other three possibilities are not selected.

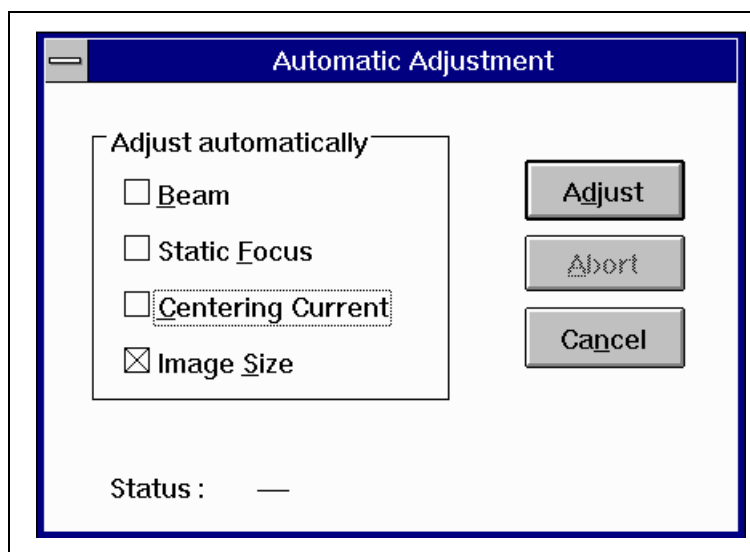


Fig. 5

- Click "**Adjust**" and let it run through until the "**finished**" status appears. Save the data with "**Permanent**".
- Quit the service program of VIDEOMED S.
- Switch off the system and, after approx. 10 seconds, switch it on again after the TV system has been de-energized.

## Setting the size of the AGC measurement fields

- Call up <Configuration><Measuring area> and set the size of the measurement field according to the table. Use "**Send**" to send values and "**Permanent**" to save them.

The screenshot shows a software window titled "Measuring area". Inside, there are four rows of settings, each with a label, a value in a text box, and the unit "Grid units". The settings are: "Full image" with value "4.5", "Zoom 1" with value "6.0", "Zoom 2" with value "9.0", and "Zoom 3" with value "11.0". At the bottom of the window are three buttons: "Reset", "Send", and "Cancel".

I.I. Type	Zoom 0	Zoom 1	Zoom 2	Zoom 3
40 cm	4.5 GU	6.0 GU	9.0 GU	11.0 GU
33 cm	4.5 GU	6.0 GU	9.0 GU	11.0 GU
27/23 cm	6.0 GU	9.0 GU	11.0 GU	n.a.

Fig. 6

## Adjusting the fix gain 2 (only with Fluorospot H)

- **SS OFF** at the generator
- Connect oscilloscope to the TV central control unit D8.TP BAS1, or FLUOROSPOT H Transition Panel TP6.  
Ext. trigger to D10.X4 ( $V_{\text{pulse}}$ ).
- Create a folder, e.g. "Test", in the patient list on the FLUOROSPOT H and select Acquisition (F4).
- Call up DR single or Dr series 0.5 f/s organ program.
- Call up **<Configuration><Video Amp>** in the VIDEOMED S service software
- Select peak suppression with the **"Enable"** box.  
"none" appears in the **"Peak Suppress"** box (Fig.7).
- Select **"Adjust"**.  
Note: No message is shown in the status line after **"Adjust"** is clicked.
- Quit the window with **"Cancel"**.

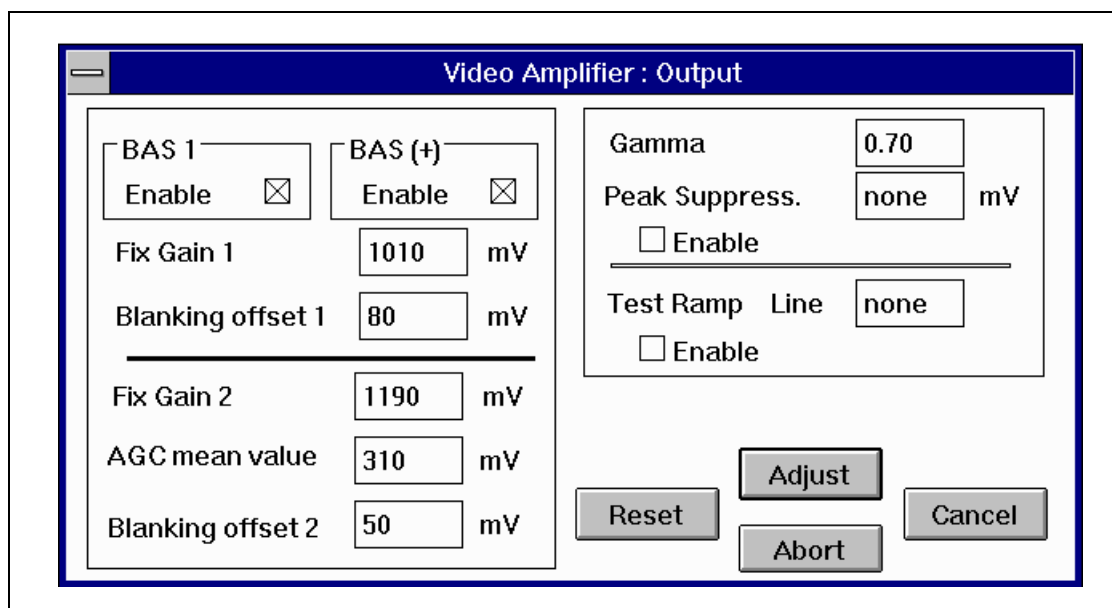


Fig. 7

- Also quit the following mask with **"Cancel"**. By doing so, the adjustment is not made permanent (Fig.8).

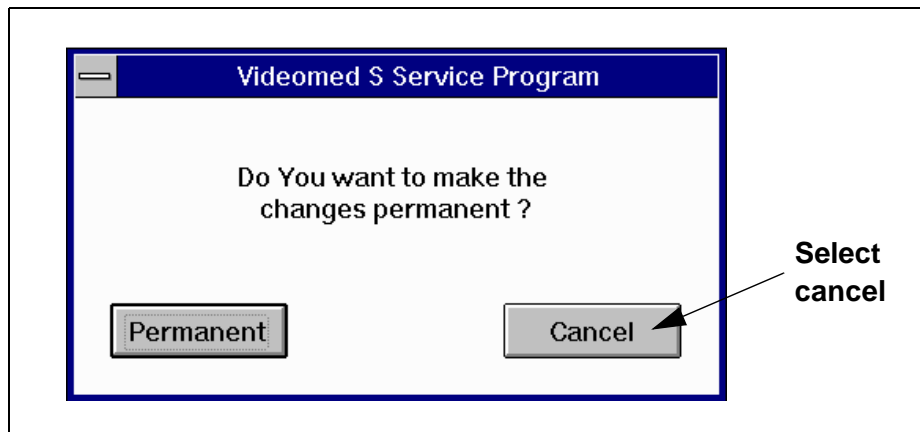


Fig. 8

- Call <Videoamplifier:Input and Processing> under <Diagnostic> (Fig. 9).  
**With video amplifier D8 part No. 15 99 898**
- Enter 2000 mV in the "Test Pattern" box and confirm with "Send".  
**With video amplifier D8 Part Np. 37 94 208**
- Enter 1410mV in the "Test Pattern" box and confirm with "Send".

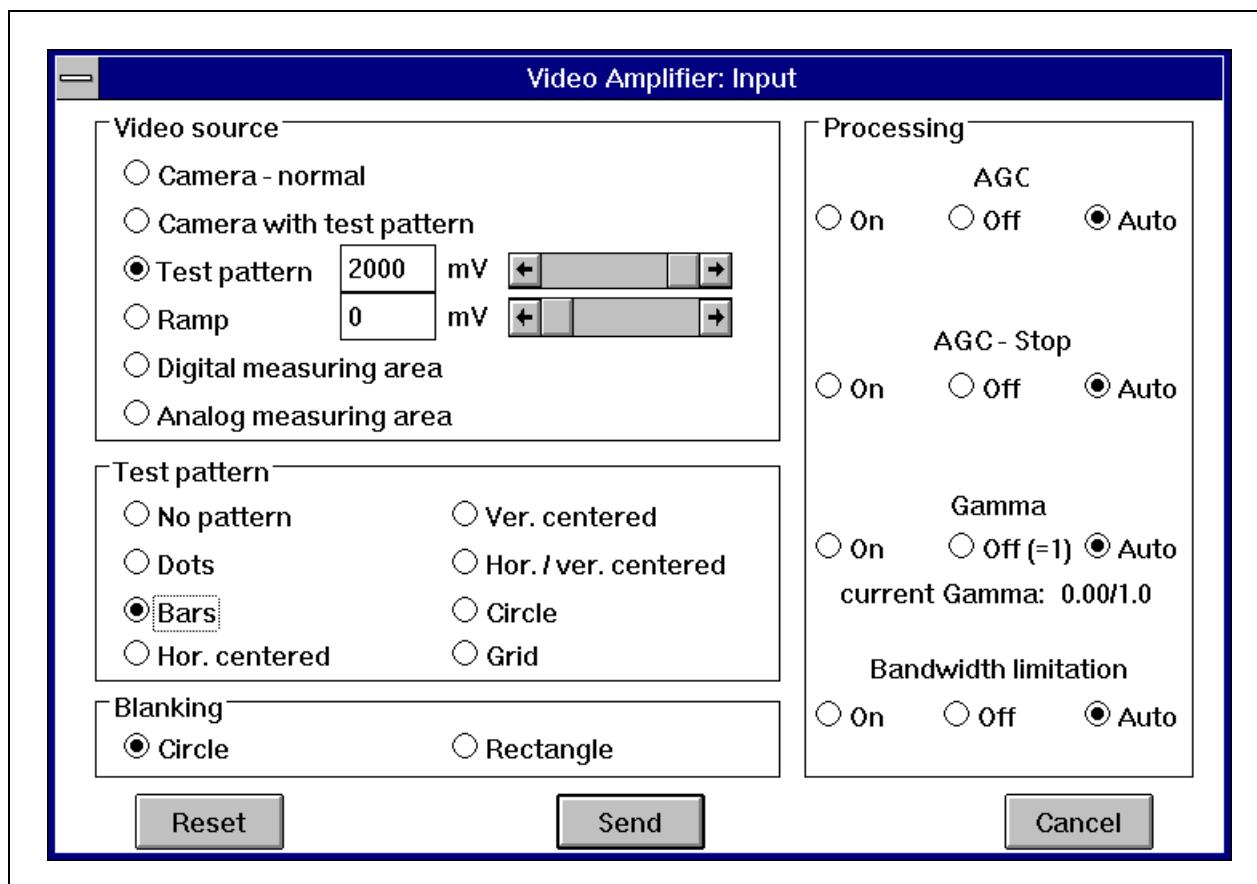


Fig. 9

- Release DR single exposure on the unit
- Measure the BA signal for manual 2 in the image and line center. **Reference value U =  $1250 \pm 20$  mV.**

If the value is not obtained within the tolerance, proceed as follows:

- Call up **<Configuration><Video Amp>** in the VIDEOMED S Service Program (Fig. 7).
- Increase or decrease accordingly the adjustment for **"Fix Gain 2"** and adjust with **"Adjust"**.
- After each change release a further DR exposure with the square-wave signal.
- If the reference value is obtained, take over the adjustment with **"Permanent"**.
- Call up again **<Configuration><Video Amp>**, set the **"Peak Suppress."** to 800 mV and select **"Adjust"**.
- Release DR exposure with the test signal.
- Measure the BA signal in the image and line center. **Reference value U =  $1050 \pm 20$  mV.**
- If the value is not obtained, change the adjustment of the Peak Suppression correspondingly.
- Once the reference value is obtained, save the last adjustment with **"Permanent"**.

## Overview of the Configuration as H1X Emulation

- Call configuration via **<Info><Configuration>** and compare with the stored settings.
- If necessary, change parameters according to overview Fig.10 .

Configuration			
Emulation: KK-Interf.-Videomed H1X		Tube:	Triode
Norm:	1249 Lines 50 Hz	Target-voltage:	50.0 V
Overframing:	No	Horizontal deflection:	reversed
Insulated V-Signal:	No	Vertical deflection:	reversed
		Conn. H+V-Reversion:	No
Videogain + max. beam-current			
	gain	max. beam-current	
for fluoro:	3 dB	1750 nA	
for exposure with progr. scan:	3 dB	1750 nA	
for exposure with slow progr. scan:	6 dB	1400 nA	
Video Amplifier			
Input: camera-normal			
Test Ramp Line		none	
Output:	BAS 1,BAS 2	BAS (+)	
enabled:	Yes	Yes	
Blanking-offset I:	80 mV	II:	50 mV
Fix Gain I:	1010 mV	II:	1190 mV
Gamma:	0.70	Blanking-mode: circle	
AGC mean:	310mV	Peak Suppr.: 800mV	
bias-light: 28 nA (low), 28 nA (high), pulsed			
measuring area			
full:		4.5 GU	
Zoom1		6.0 GU	
Zoom2		9.0 GU	
Zoom3		11.0 GU	
		Ok	
		Print	

Fig. 10

### Note

The parameters for the image reversal must be determined depending on the unit.

The settings may not be changed for: Videogain+max. beam-current, Gamma, Peak Suppr. and bias-light.

The values for Blanking-offset 1/2, Fix Gain 1/2, AGC mean and Peak Suppr. are pre-settings and may be changed if necessary. The desired values required can be taken from page 2-9 of the present instructions.

## Overview of the Configuration as HD Emulation

- Call configuration via **<Info><Configuration>** and compare with the stored settings.
- If necessary, change the parameters according to overview (Fig.11).

The screenshot shows a 'Configuration' window with a blue title bar. It contains several sections of settings:

- Emulation:** KK-Interf.-Videomed H1X
- Norm:** 1249 Lines 50 Hz
- Overframing:** No
- Insulated V-Signal:** No
- Tube:** Triode
- Target-voltage:** 50.0 V
- Horizontal deflection:** reversed
- Vertical deflection:** reversed
- Conn. H+V-Reversion:** No
- Videogain + max. beam-current:**

	gain	max. beam-current
for fluoro:	3 dB	1750 nA
for exposure with progr. scan:	3 dB	1750 nA
for exposure with slow progr. scan:	6 dB	1400 nA
- Video Amplifier:**

Input: camera-normal			
Test Ramp Line: none			
Output:	BAS 1, BAS 2	BAS (+)	
enabled:	Yes	Yes	
Blanking-offset I:	80 mV	II:	50 mV
Fix Gain I:	1010 mV	II:	1190 mV
Gamma:	0.70	Blanking-mode: circle	
AGC mean:	310 mV	Peak Suppr.: 800 mV	
bias-light: 60 nA (low), 60 nA (high), pulsed			
- measuring area:**

full:	4.5 GU
Zoom1	6.0 GU
Zoom2	9.0 GU
Zoom3	11.0 GU

At the bottom right, there are two buttons: 'Ok' and 'Print'.

Fig. 11

### NOTE

The parameters for the image reversal must be determined depending on the unit.

## Nominal values for the H1X emulation

### Pedestal

Operating mode	BA-Signal
Manual gain 1	$80 \pm 10$ mV (presetting)
Manual gain 2	$50 \pm 10$ mV

### Manual gain 1/2

#### With video amplifier D8 Part No. 15 99 898

TV CCU	Manual gain 1	Manual gain 2
Input	B-Signal = 2000mV	B-Signal = 2000 mV
Output	BA-Signal = 1100 mV $\pm 20$ mV	BA-Signal = 1050 mV $\pm 20 =$ mV

#### With video amplifier D8 Part No. 37 94 208

TV CCU	Manual gain 1	Manual gain 2
Input	B-Signal = 1410mV	B-Signal = 1410mV
Output	BA-Signal = 1100 mV $\pm 20$ mV	BA-Signal = 1050 mV $\pm 20 =$ mV

### AGC function

BA- Signal with 2.1 mm CU (valid for all I.I.Formats)

Interlaced	$350$ mV $\pm 30$ mV
Progressive	$350$ mV $\pm 30$ mV



## Generating a Saw-Tooth

The grid signal generator can no longer be used with the VIDEOMED SX. In order to generate a saw-tooth (BA=1100 mV) at D8.BAS 1 which is necessary to set the Video In-board of the FL-H, some setting parameters have to be changed.

- Select **<Configuration> <Video-Amp>** in the service program of the VIDEOMED SX.
- First enter 1500 mV for Fix Gain 1/2 and confirm the setting with **"Adjust"**.
- Change the values as shown in the **Video Amplifier: Output** window. Select **"Adjust"** and let the video amplifier adjust itself (Fig.1).
- Quit the window with **Cancel**.

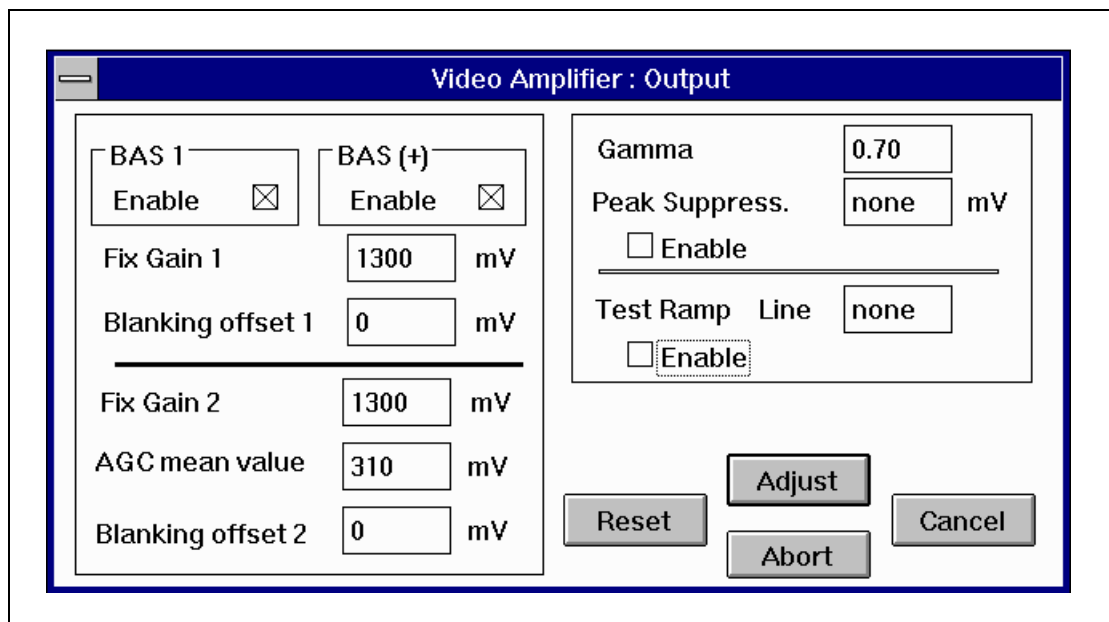


Fig. 1

- Do **not** accept the settings with **"Permanent"**, but close the mask with **"Cancel"** (Fig.2).

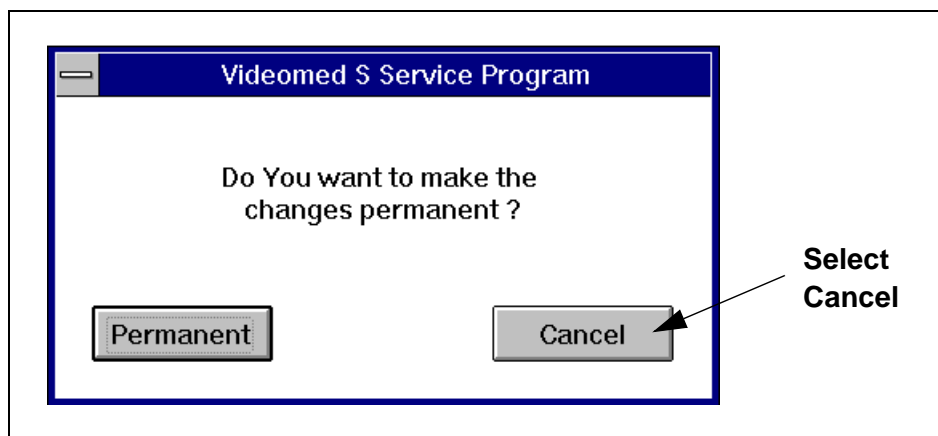


Fig. 2

- Connect oscilloscope to test point D8.BAS 1
- Select on the generator deck an organ program for DSA exposure (manual gain1) or for DR exposure (manual gain2) according to whether the B channel or the A channel of the Video In board of the FL-H should be adjusted.
- Create a folder, e.g. "Test" in the patient list of the FL-H via the function key F1 and select Acquisition with F4.
- **SS off**
- Release an exposure or series without radiation with the exposure release switch of the unit.
- Call **<Service Switches>** under **<Diagnostics>**. Click DL EIN Simulation "**on**", as shown in Fig.3 and switch video channel through with "**Send**".

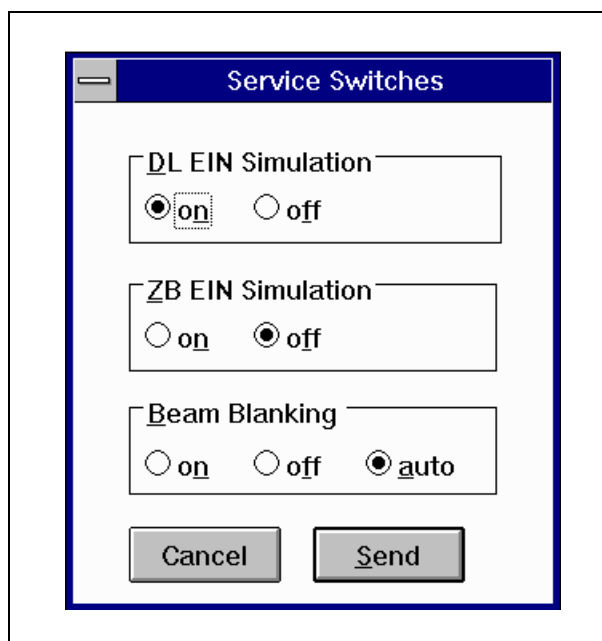


Fig. 3

- Call window under **<Diagnostics><Videoamplifier:Input and Processing>**.
- Set values as shown below and confirm with "**Send**".  
Start value for "**Ramp**" with video amplifier D8 Part No. 15 99 898 is 1680 mV:  
Start value for "**Ramp**" with video amplifier D8 Part No. 37 94 208 is 1200 mV.
- Press precontact with the exposure release switch of the unit, or with the footswitch, release exposure.
- By changing the value "**Ramp**" (1800 mV), adjust a saw tooth signal  $BA=1100mV \pm 10\text{ mV}$ , measured above the line in the middle of the image.

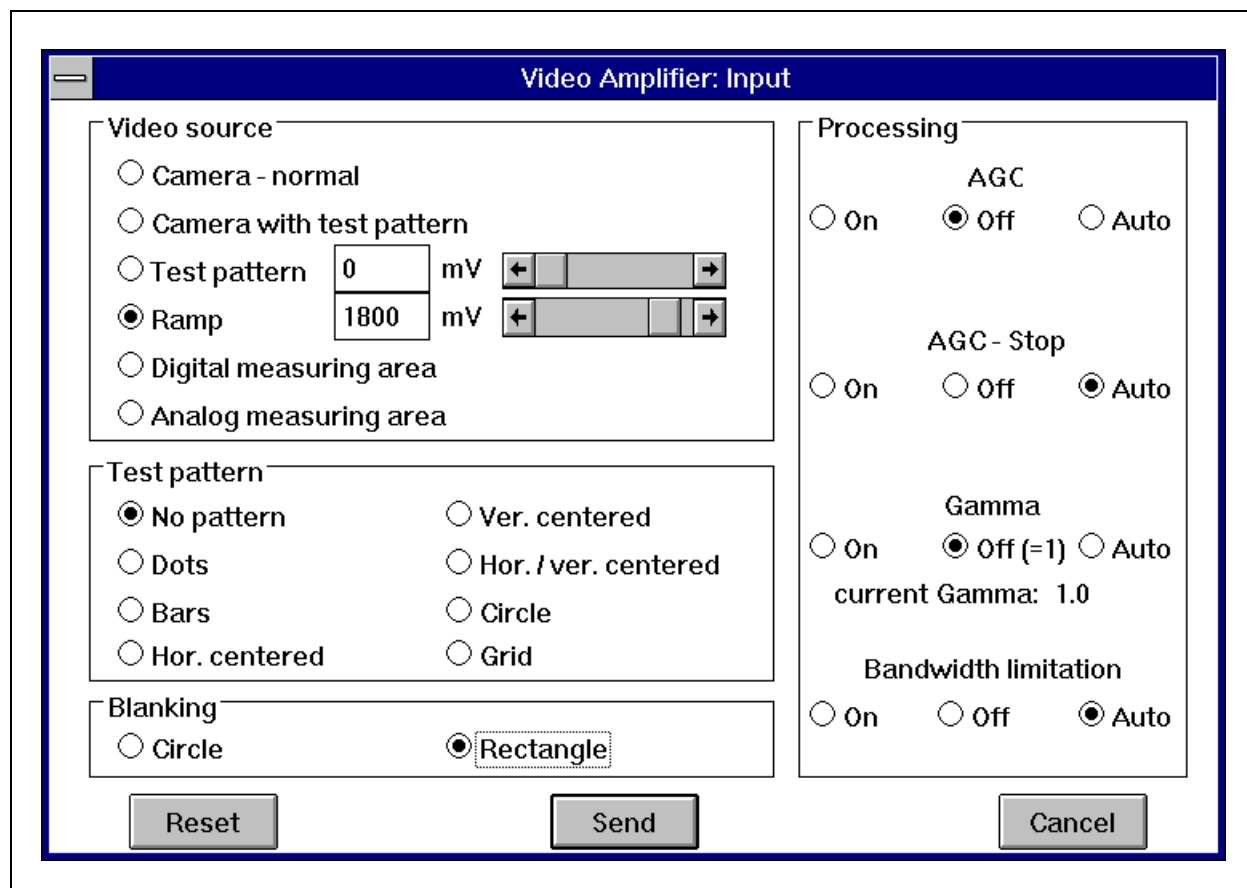


Fig. 4

- The settings for the FLUOROSPOT H are made according to the Camtronics Service Manual 89999-0031.
- 
- If the saw tooth signal is not needed anymore, quit the **"Video Amplifier : Input"** window with **"Cancel"** .
- Select **"Exit"**.
- The mask that follows has **by all means** to be confirmed with **"Reject"** as otherwise operational values usually set up are not reproduced anymore.
- Quit the VIDEOMED S service program.
- **SS ON** at the generator.

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## Chapter 1

Page 1 "Validity of the document" section included.  
"prerequisites" section removed.

## Chapter 2

Page 1 A sentence added in the "Start service program" section.  
Page 6 Configurations for two different video amplifiers D8 included.  
Page 9 Page break  
Page 10 Additional table included in the "Nominal values for the HiX emulation" section.

**Chapter 3** Changed

**Chapter 4** Changed

TDAX 7 / Seel

TDAX 1 / Biedermann

AUT 98 /Carver

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